

Thomas Hopkins 1025

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THE

DESCRIPTION and USE

OF AN

Architectonick Sector,

And also of the *Architectonick*

SLIDING PLATES

WHEREBY

SCALES of all SIZES

ARE MOST

Readily and Univerfally obtain'd for
Fluting PILLASTERS and COLUMNS,
and *Drawing* the Geometrical PLANES
and UPRIGHTS, in any of the *Five*
ORDERS, according to the given
DIAMETER of a *Column*.

WITH

Several other SCALES, very Convenient and
Ready for the *Practice* of the *Ingenious Designers*
of BUILDINGS.

By T. CARWITHAM of Twickenham.

L O N D O N:

Printed by S. ARIS for THOMAS HEATH, at the
Hercules, next Door to the *Francis Tavern* in the
Strand. 1723.



READER.



HAVING for some Time practis'd the Drawing of Architecture, I observ'd the Tediumness of Making, and the Uncertainty of Working by Scales on Paper: And tho' the Plain Scale is not liable to these Inconveniencies, yet it is defective in this, That it seldom answers the most convenient Size for the Drawing propos'd. And after some Reflections of this Kind, found that a Sector, or our Sliding Plates, are Instruments capable of furnishing, uni-

A 2

versally,





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A 2 *versally,*

versally, the various Scales requisite in Practice.

But notwithstanding that the Sector is justly preferr'd to any other sort of Scale, yet the Lines on the usual ones are unapt for the Drawing of Architecture: For some of them, as the Sines to 90 Degrees, and their corresponding Tangents and Secants, &c. do not immediately relate to this Science. And tho' the Line of Lines on the Common Sector, may be said to divide any given Line into any Number of equal Parts, yet it is not so fit, nor so ready to draw the Flutes and Fillets of Pillasters, or to draw the Planes and Uprights of Buildings, as our Lines of 29 and 30. And for drawing the Flutes and Fillets of a Column, either in the Upright, or the Plain, neither the Common Sector, nor indeed any other hitherto apply'd to Buildings, have any Provision at all. But these Things our Lines of 32 and 48 perform with all Expedition and Exactness, without drawing any other Lines than the very Edges of the Fillets themselves.

But

TO the READER.

But besides these already named, there are other Sector-Lines, and also some parallel to the Sides, aptly contriv'd for Architecture; whose Description and Uses being hereafter explain'd, I refer you to the following Pages, rather than detain you here any longer.

As to the Acceptation this is like to meet with: If any one says he could improve this Instrument; I shall not return him the old Adage,

Facile est Inveniri addere.

But desire that he would communicate it for the Benefit of Mankind.

And if any one says he could have contriv'd an Instrument fitter for this Purpose, I shall only say,

*----- Si quid novisti rectius istis,
Candidus imperti; si non, his utere mecum.*

And

And I no ways doubt but that the Ingenious Artist will rather forgive, than frown on my Forwardness to serve the World; since every one may at one Reflection conceive, by this Publication, my Design was the Advantage of others, and not of my self.



THE

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DESCRIPTION

OF THE

Architectonick SECTOR.



CHAP. I.

Of the SECTOR, and its Lines.



ESIDES its Opening into equal Legs by *its Frame*
a Joint as usual, which Joint is mark'd *ing*.
(Fig. 1.) with Letter R: One of those
equal Legs, by opening at the Joint S,
becomes another Sector.

N. B. The other Leg might be made another Sec-
tor, without any Confusion to the Lines already laid
thereon.

Of

The DESCRIPTION of

*Sector Lines
thereon.*

*Sector Lines
equally di-
vided.*

Of the Sector Lines hereon drawn, those on one Side are divided equally, those on the other unequally.

Of the Lines divided equally, which run to the Joint R, one is divided into 30 Parts, number'd 10, 20, 30, and mark'd at 30, PP, with several Points punch'd thereon.

Another into 30 Parts, number'd 10, 20, 30, and these again subdivided.

And a third Line into 60, number'd 10, 20, 30, 40, 50, 60.

And the Line divided equally, which runs to the Joint S, consists of 12 grand or primary Divisions, number'd 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12; and these again by lesser Divisions are subdivided each into 12. So that the whole is divided into 144 Parts.

Of the Lines unequally divided, which run to the Joint R, one consists of 32 Parts, number'd 8, 16, 24, 32, and mark'd F P C. Another is divided into 48, number'd 12, 24, 36, 48, and mark'd F C. And the third, is part of the latter Line inverted, and number'd backwards, as far as its Extent. And all these have several Points punch'd in them.

There is also a Line of Polygons.

The Lines divided unequally, which runs to the Joint S, is a common Line of Chords.

*Lines pa-
rallel to
the Edge of
the Sector.*

There are also two Lines parallel to the Edge of the Sector, one on each Side; a Line of Numbers, and a Line of Inches, subdivided into Twelfths.

Besides these here mention'd, (if the Artist pleases,) such others may be laid on the Edge, and such other Sector Lines on the third Sector, as he shall think convenient.



C H A P.

THE USE OF THE SECTOR.



The Use of the Line of 29, mark'd F P.



THE Line mark'd F P is to find the Measures of the Flutes and Fillets of a Pillaster according to its Breadth: thus,

Open the Sector till the Distance between 29 and 29 is equal to half the Breadth of the Pillaster: The Sector thus remaining, lay the Distance between 3 and 3 both Ways, from the Middle of the Pillaster; and this will give the middle Flute. Then take with one Pair of Compasses the Distance between 2 and 2, and it shall be the Breadth of each Fillet; and take with another Pair of Compasses the Distance between 6 and 6, and it will be the Breadth of each Flute. Lastly, with these two Pair of Compasses lay these Distances alternately, beginning with a Fillet each Way from the Edge of the middle Flute, and you will have the true Breadths of the seven Flutes and eight Fillets agreeable to the Breadth of the Pillaster.

As for Example. FIG. III.

Take *ai* or *gr* in your Compasses, and open the Sector till the Distance between 29 and 29 be equal to that in your Compasses:

The Sector remaining with this Opening, take the Distance between 3 and 3, and lay it from *a* to *b*, and from *a* to *h*.

Then take with one Pair of Compasses the Distance from *a* to *a*, and it will be the Breadth of each Fillet.

And

B

And

The DESCRIPTION of

And take the Distance from 6 to 6 with another Pair of Compasses, and it will be the Breadth of each Flute.

Then lay the Breadth of a Fillet from *b* to *c*, and from *k* to *l*.

Then the Breadth of a Flute from *c* to *d*, and from *l* to *m*.

Then the Breadth of a Fillet from *d* to *e*, and from *m* to *n*.

Then the Breadth of a Flute from *e* to *f*, and from *n* to *o*.

Then the Breadth of a Fillet from *f* to *g*, and from *o* to *p*.

And lastly, the Breadth of a Flute from *g* to *h*, and from *p* to *q*.

And then, if you have truly wrought, there will be left from *b* to *i*, and from *q* to *r*, the true Breadths of the outer Fillets.

To prevent those Errors that are apt to arise from often turning Compasses over and over, you may perform the foregoing Work thus:

The Sector being opened to the Distance *ai*, or *ar*, as before, and the middle Flute also drawn, lay the Distance

between 5 and 5, from *a* to *c*, and from *a* to *l*;
between 11 and 11, from *a* to *d*, and from *a* to *m*;
between 13 and 13, from *a* to *e*, and from *a* to *n*;
between 19 and 19, from *a* to *f*, and from *a* to *o*;
between 21 and 21, from *a* to *g*, and from *a* to *p*;
between 27 and 27, from *a* to *h*, and from *a* to *q*;

and you will have the Flutes and the eight Fillets in their due Proportion.

To these Divisions 3, 5, 11, 13, 19, 21, 27, are Points punch'd for the more ready finding the Divisions, and more exactly fixing the Points of the Compasses at their proper Distances.

If you find any Inconvenience in taking the Distance between 5 and 5, 3 and 3, because very near the Center of the Sector, it may be remedied thus;

Take the Distance between 26 and 26, and lay it from *i* to *b*, and from *r* to *k*.

And

an Architectonick Sector.

And the Distance between 24 and 24, and lay it from *i* to *e*, and from *r* to *l*.

The same may be perform'd with more Speed thus:

Having as before duly opened your Sector, and drawn the middle Flute; take the Distance between 24 and 24, and lay it from *b* to *b*, from *i* to *e*, from *k* to *g*, and from *r* to *l*. And then the Distance between 8 and 8, will reach from *e* to *e*, from *e* to *g*, from *b* to *f*, and from *f* to *d*; and also from *l* to *n*, from *n* to *p*, from *q* to *o*, from *o* to *m*. And then you have the true Breadths of all your Flutes and Fillers.

The preceding Operations are built on this Principle, That in the Breadth of every Pillaster there are seven Flutes and eight Fillers; and that the Breadth of every Filler is $\frac{1}{3}$ Part of the Breadth of a Flute; which is the Proportion generally agreed on by Architects. And therefore, if you suppose each Filler to consist of two Parts, each Flute will consist of six such Parts; and so the whole Breadth of the Pillaster will consist of 58 equal Parts; and consequently the half Breadth of 29.

But if it be required to divide the Breadth of a Pillaster into any other Number of Flutes and Fillers, then open the Sector till the Distance between the Sum of those Numbers, in any Sector Line of equal Parts, is equal to the Breadth of the Pillaster given. Then take the Distance between 3 and 3 in that Sector Line, it will give the Breadth of a Flute, and the Distance between 1 and 1 will be the Breadth of a Filler, by which the Breadth of the Pillaster may be divided into the requir'd Number of Flutes and Fillers.

If an Inconvenience appear in working near the Joint of the Sector, or often laying over and over the same Distance, it may be removed thus:

Having opened the Sector as before directed, till the Breadth of the Pillaster be laid between the Numbers arising from the Flutes and Fillers; then subtract 1 and 3 alternately from that Number, as often as you can get a Remainder greater than the Num-

The Description of

ber expressing half the Breadth of the Pillaster. And then these several Remainders taken from the Sector, and laid from the Extremity of the Pillaster's Breadth, will divide it into its requir'd Number of Fillets and Flutes.

For EXAMPLE:

Suppose the Breadth of a Pillaster was to be divided into six Flutes, and consequently seven Fillets; to seven, the Number of Fillets, add three times six, the Number of Flutes, and the Sum is 25. Then open the Sector, till the Distance between 25 and 25 be equal to the Breadth of the Pillaster; and from 25 subtract 1 and 3 alternately, as often as you get a Remainder greater than 12. And the several Remainders will be 24, 21, 20, 17, 16, 13. Take the Distance between 24 and 24, and lay it from the out-sides of the Pillaster, and it will give the outermost Fillets.

Take the Distance between 21 and 21, and lay it from the Outsides of the Pillaster, and it will give the outermost Flutes.

Take the Distance between 20 and 20, and lay it also from the Outsides of the Pillaster, and it will give the next Fillets.

And 17 and 17 would give the following Flutes.

And so proceed with 16 and 13, and your Pillaster will be divided into its requir'd Flutes and Fillets.

If your Sector Lines consisted of Parts sufficient, you may with some Advantage multiply the aforesaid Numbers, viz. 25, 24, 21, 20, 17, 16, 13, by 2, 3, or 4, and use the Products thence arising in their Stead.

CHAR

THE USE OF THE LINE OF 32, MARK'D F.P.C.



The Use of the Line of 32, mark'd F.P.C.



THE Line mark'd F.P.C. is to divide the Plane of a Column into its 24 Flutes and 24 Fillets, thus:

Open the Sector till the Distance between 32 and 32 be equal to the Semidiameter of the Column; and lay this same Distance from the Front of the Column on the Circumference, till you come to the Rear, and it will divide the half Circumference into three, and so the Whole into six equal Parts. Then lay the Distance between 3 and 3 from the Front both Ways, and it will give the Front Flute. And if the same Distance be laid from those other five Points, which with the Front divided the Circumference into six equal Parts, you will have as many other Flutes, each in its proper Place, and of its proper Breadth.

Then take in one Pair of Compasses the Distance between 2 and 2, and it will be the proper Breadth of a Fillet; and in another Pair of Compasses the Distance between 6 and 6, which will be the Breadth of a Flute; And these Distances laid one after another round the Circumference, will divide it into its required Flutes and Fillers.

For EXAMPLE:

Let *abp* represent one Quarter of the Plane of a Column, *b* its Front; and suppose *ap*, its Semidiameter,

The DESCRIPTION of

meter, be two Inches; open the Sector till the Distance between 32 and 32 be equal to two Inches; and lay this same Distance from b to q ; so will bq be one 6th Part of the whole Circumference. Then lay the Distance between 3 and 3 from b to r , and from q to k and l .

Now take the Distance between 2 and 2 in one Pair of Compasses, it is the Measure of a Fillet, and the Distance between 6 and 6 in another Pair; which is the Measure of a Flute.

Then lay the Measure of a Fillet from c to d ;

Then the Measure of a Flute from d to e ;

Then the Measure of a Fillet from e to f ;

Then the Measure of a Flute from f to g ;

Then the Measure of a Fillet from g to h ;

Then the Measure of a Flute from h to i ;

Then the Measure of a Fillet from i to k ;

Lastly, do the same in the other Parts of the Circle's Circumference, and it will be divided into its required Number of Flutes and Fillets.

Or, to prevent such Errors as may arise by often turning over the Compasses, you may work thus:

The Sector being open'd to the Distance ab or ap , and the Circumference divided into six equal Parts in the Points b, q, r, c . lay the Distance

between 3 and 3, from b to c ;

between 3 and 3, from b to d ;

between 11 and 11, from b to e ;

between 13 and 13, from b to f ;

between 19 and 19, from b to g ;

between 21 and 21, from b to h ;

between 27 and 27, from b to i ;

between 29 and 29, from b to k ;

And

an Architectonick Sector.

c 9

And do the same in the other Parts of the Circumference, and so will the Whole be divided into its requir'd Flutes and Fillets.

N. B. To these Numbers are Points punch'd; by the Help of which, without the Numbers, by Inspection only, the several Distances may be taken of.

If any Inconvenience seems to arise in working near the Joint of the Sector, it may be remedied thus:

Instead of the Distance between 3 and 3, to be laid from *b* to *e*, take the Distance between 29 and 29, and it will reach from *q* to *c*.

And instead of the Distance between 5 and 5, to be laid from *b* to *d*, take the Distance between 27 and 27, and it will reach from *q* to *d*.

But the foregoing Operation may be perform'd with fewer Opening of the Compasses, thus: Having laid the Distance *ab* or *ap* from *b* to *q*, and from *p* to *r*, the Distance from

29 to 29, will reach from *b* to *k*, from *q* to *c*, and from *r* to *o*;

27 to 27, will reach from *b* to *i*, from *q* to *d*, and from *r* to *n*;

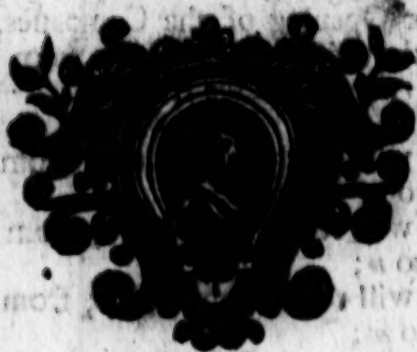
21 to 21, will reach from *b* to *b*, from *q* to *e*, and from *r* to *m*;

19 to 19, will reach from *b* to *g*, from *q* to *f*, and from *r* to *l*.

And the like will happen in dividing the other Quarters of the Circumference; and consequently they may be divided, also while the Compasses are thus open'd.

The DESCRIPTION of

If your Column be Dorick, a Quarter of which is represented by the Quadrant abz , and is as usual to be fluted without Fillets, open, as before, the Sector, till the Distance between 32 and 31 be equal to ab , or az ; and lay the same Distance from b to A , and from z to B ; and then the Distance between 12 and 13 will reach from b to r , from B to s , from B to w , from A to v , from A to y , and from z to x : And so will the Quarter of your Column be divided into its proper Flutes. And in like manner, and with the same Opening of the Compasses, may the other Quadrants be divided.



CHAP. IV.

The Use of the Line of 48, mark'd F C.



HE Use of this Line of 48, is to give due Breadths to the Flutes and Fillets on the Semidiameter of the Geometrical Upright of a Column; thus;

Open the Sector till the Distance between 48 and 48 on F C be equal to the Semidiameter of the Column; then lay the Distance between 3 and 3, each Way from the Front of the Column, and you will have the middle Flute. To this 3 add 2, the Breadth of the Fillet, and lay the Distance between (their Sum) 5 and 5, from the Front of the Column each Way, and you have the Fillets adjoining to the middle Flute. Now to 5 add 6, the Breadth of a Flute, and lay the Distance between 11 and 11 (the Sum) both Ways from the Front, and you have the Flutes adjacent to the middle one. And in this manner proceeding, and allowing two to each Fillet, and six to each Flute, you will give to each its proper Breadth.

For EXAMPLE;

Let the Semidiameter of the Column be ap , equal to two Inches. (Fig. 3.) Open the Sector till the Distance between 48 and 48 be equal to ap . Then lay the Distance

between 3 and 3, from a to C;
between 5 and 5, from a to D;
between 11 and 11, from a to E;
between 13 and 13, from a to F;

C

between

The DESCRIPTION of

between 19 and 19, from *a* to G;
 between 21 and 21, from *a* to H;
 between 23 and 23, from *a* to I;
 between 25 and 25, from *a* to K;
 between 35 and 35, from *a* to L;
 between 37 and 37, from *a* to M;
 between 43 and 43, from *a* to N;
 between 45 and 45, from *a* to O;

And the Semidiameter will be divided into its Flutes and Fillets with their proper Breadths.

And here we may observe, that at these Numbers there are Points punch'd, as in the former Lines.

And to prevent the Inconvenience of working near the Joint of the Sector, there is Part of this Line inverted, and number'd 0 1 2 3 4 5, and there stops, with Points punch'd at the Numbers 2 and 5. Its use is thus;

Take from this short Line the Distance between 3 and 3, and it will reach from *p* to C; and the Distance between 5 and 5 will reach from *p* to D.

If you are to draw the Flutes on the Semidiameter of a Dorick Column, open the Sector till the Distance between 48 and 48 be equal to the Semidiameter of the Column; and lay from the Front *a* to P, the Distance between 4 and 4, for half the Front Flute, and the Distance

between 12 and 12, from *a* to Q;

between 20 and 20, from *a* to R;

between 28 and 28, from *a* to S;

between 36 and 36, from *a* to T;

between 44 and 44, from *a* to V;

allowing every where 8 to every Flute, they having no Fillets.

The

an Architectonick Sector.

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The Distance between 4 and 4 may be taken from the short Line running to 5 only, and laid from z to P.

N. B. If the whole Leg of the Sector, whose Joint is mark'd R, be also made a Sector as well as that whose Joint is mark'd S, this Line of 48 may be laid thereon with Points punch'd proper for the Derrick Flutes, and will be ready and fit by Inspection, without Regard had to the Numbers.



If it be required to draw the Arch Base (Fig. 3) to a Column of four feet Diameter. Open the Sector till the Distance between 20 and 20 be equal to two inches, the Semidiameter of the Column. Then the Distance between

10 and 10 gives the Height of the Plinth
 7 1/2 and 7 1/2 gives the Height of the lower Torus
 1 1/2 and 1 1/2 gives the Height of each Flute
 1 1/2 and 1 1/2 gives the Height of the Hollow
 2 and 2 gives the Height of the upper Torus

C 2 C H A P.

ARCHITECTURE

CHAP. V.

The Use of the Line 30 in Architecture.



Architects divide the Diameter of a Column at the Base into 60 equal Parts, and call them Minutes, by which every Part of that Column is to be measured. And since the whole Diameter must consist of 60 equal Parts, the Semidiameter will consist of 30. Therefore, if the Sector be opened till the Distance between 30 and 30 be equal to the Semidiameter of the Column, all Distances from that between 1 and 1, even to that between 30 and 30, will be so many Minutes of that Semidiameter. So that taking the Distance between any Number, denoting the Minutes in any one Member of that Column, and its Equal, it shall be the proper Distance to measure or lay down that Member in a due Proportion to the whole Column.

FOR EXAMPLE;

If it be required to draw the Attick Base (Fig. 3.) to a Column of four Inches Diameter.

Open the Sector till the Distance between 30 and 30 be equal to two Inches, the Semidiameter of that Column. Then the Distance between

- 10 and 10 gives the Height of the Plinth
- $7\frac{1}{2}$ and $7\frac{1}{2}$ gives the Height of the lower Torus
- $1\frac{1}{2}$ and $1\frac{1}{2}$ gives the Height of each Fillet
- $4\frac{1}{2}$ and $4\frac{1}{2}$ gives the Height of the Hollow
- $5\frac{1}{2}$ and $5\frac{1}{2}$ gives the Height of the upper Torus

In like Manner, the Projections of the several Members of the Base, and the Heights and Projections of the several Members of the Capital, Entablature and Pedestal, may be measured or laid down by the same Scale, as will appear by applying it to the 4th and 5th Figures.

But we must observe, that if any Height or Projection be greater than the Semidiameter of the Column, it must be laid off at several Times, by laying down the Semidiameter so often, that there may remain to be laid down some Distance less than the Semidiameter.

We are farther to observe in this Example, that the Distance 14, the Height of the Fillet, is inconveniently taken, as falling too near the Joint of the Sector; but if we having laid down the Height of the Plinth 10, and the Length of the lower Torus 7½, the Height of the Fillet may truly and conveniently be laid down, by taking the Distance between 18½ and 18½, the Height of the Plinth, Torus, and Fillet together, and laying it from the Bottom of the Plinth upwards.

And in other Cases we may use the same Caution, by adding the very small Members to one or more of those next adjoining to them.

The Line of 60 is useful for the same Purpose that the Line of 30 is, when the Semidiameter of the Column is too small to be applied to the Line of 30.

For make the Distance between 60 and 60 equal to the Diameter of your Column; and then the Sector is fitted for drawing the Heights and Projections of a Building by a much less Scale than that arising from the Line of 30, by taking your Measures of this Line of 60.

Moreover, you may observe, that if your Height or Projection be more than one Semidiameter of your Column, but less than two, it may be laid down at once; which cannot be done, when you use the Line of 30.

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The Use of the Line divided into 144, running to the Joint S.



THIS is used in finding a Scale, which will express the Inches and Twelfths of an Inch to any assigned Length for the Foot; thus:

Open the Sector, till the Distance between 144 and 144 is equal to the Scale of a Foot; and then the Distance between any of those Divisions in this Scale gives a Distance that will represent the proposed Inches, and Twelfths of Inches, according to your assigned Scale for a Foot.

So if you would take of this Scale the Length representing five Inches nine Twelfths, when the Foot is represented by an Inch and a half, open the Sector till the Distance between 144 and 144 is an Inch and a half; and then count from the Number five towards six, nine of those equal Parts, and then the Distance between that Nine and its corresponding one on the Leg of the Sector, is the Distance to represent five Inches and nine Twelfths of an Inch, when the Foot is represented by an Inch and a half.

This Line is also useful to reduce the Minutes of any Column to Feet, Inches, and Twelfths of Inches; thus:

Open the Sector till the Distance between 144 and 144 be equal to the Scale representing one Foot; and then take in your Compasses any Distance or Number of Minutes from that Column, and so apply it to the Legs of the Lines of 144, that the Feet of the Compasses may rest on like Divisions in the Legs of the

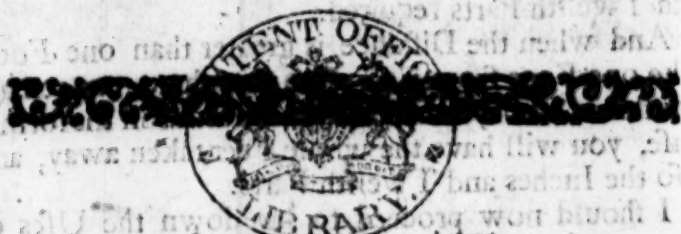
the Sector, and then the Points will shew the Inches and Twelfth Parts required.

And when the Distance is greater than one Foot, take one Foot from it so often that there may remain less than a Foot; which being reduced as in the former Case, you will have the whole Feet taken away; and also the Inches and Twelfth Parts.

I should now proceed to lay down the Uses of *Gunter's Line*, the *Line of Chords* to 60, the *Line of common Inches* divided into twelve equal Parts, and the *Line of Polygons*: But these having been sufficiently handled by every Writer on the Uses of Scales and Sectors, I shall refer you to them, and conclude with remembring, That such Lines as any Artift shall think fit to add to this Sector, may conveniently be laid down thereon, without leaving out any of these here already inserted, or producing any Confusion among them.

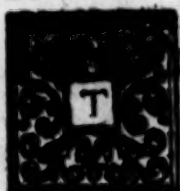


The Description of



CHAP. VII.

The Description and Use of the Sliding Architectonick Plates.



HPS Instrument consists of three Parts, one fix'd, and two moveable. The moveable Ones slide out of the fix'd One by an angular Motion, about two Joints. The Sides of the fix'd Part are work'd down to an Edge not much unlike that of a Cheffil, on which are cut four Lines of Divisions, and number'd; which, together with four others on the Sliding Plates, perform the Work of a Sector. But whereas the Legs of the Sector cannot be brought to every Degree of Nearness, and that the Divisions on the Sector, very near to the Joint, are attended with some Inconvenience, because they fall very near to the Edge of the Sector; these Inconveniences are in this Instrument removed by help of a Pair of Compasses, the Inside of whose Points are curved, and the Outside of one of them strait; which Outside is always to be apply'd to the Cheffil Edge of the fix'd Part, and the other to the corresponding Divisions in the moveable Part.

The Lines on this Instrument are not much unlike those on the Sector already described: One is a Line of 60 Divisions, of the same Use with that on the Sector, viz. to give every Part of a Building its due Height and Projection, agreeable to the Diameter

meter of the Column. For Example, if it be requir'd to draw the Attick Base, Fig. 3.

Open the Compasses to the Diameter of the Column, and apply the strait Point to the Cheffil Edge on the middle Part; then draw out the moving Part, till the Distance between 60 and 60 is equal to the Diameter of your Column: And then the Distance between 10 on the Edge of the fix'd Part, and 10 on the moveable Part, is the Height of the Plinth; and the Distance between $17\frac{1}{2}$ and $17\frac{1}{2}$ is the Height of the Plinth and the lower Torus together, because the Height of the lower Torus is $7\frac{1}{2}$. And the Distance between $18\frac{1}{2}$ and $18\frac{1}{2}$ is the Height of the Plinth, lower Torus, and the Fillet, together.

And the Distance between $23\frac{1}{2}$ and $23\frac{1}{2}$ is the Height of the Plinth, the lower Torus, the Fillet and Hollow, all together.

And the like of other Heighes and Projections every where.

Another Line is divided into 29 Parts, and number'd 10, 20, 29, and mark'd FP, (as the Line FP on the Sector,) and the Manner of its Uses and its Applications to Architecture is the same: Only we may observe, That as on the Sector the Line of 29 was contriv'd for fluting the Half only of the Pillaster, this is for fluting the Whole; and as upon the Sector there were Points punch'd to represent the Flutes and Fillets, here you have Divisions cut longer than the rest, instead of those punch'd Points.

For an Example, let it be requir'd to flute the Pillaster in Fig. 2.

Draw out the moveable Part, till the Distance between 29 and 29 be equal to the Diameter of the Column; and then the Distance between 28 and 28, laid from the Question of the Pillaster, gives the outer Fillets at *f* and *g*; and by laying from the Out-sides of the Pillaster, the Distance

between 25 and 25, will give the outer Flutes at *p* and *q*; A

D

between

The Description of

between 24 and 24, will give the next Fillets at *o* and *f*;
 between 21 and 21, will give the next Flutes at *n* and *e*;
 between 20 and 20, will give the next Fillet at *m* and *d*;
 between 17 and 17, will give the next Flute at *i* and *c*;
 between 16 and 16, will give the middle Flute at *k* and *b*.

If it be required to divide the Breadth of a Pillar into any other Number of Flutes and Fillers, the Method is exactly the same as that laid down in *Chap. II.* for the Sector.

The third Line is a Line divided into 48 Parts, and number'd 6, 12, 18, 24, 30, 36, 42, 48, and mark'd FC. Its Use and Application in Architecture is in all respects the same with the Line FC on the Sector, mention'd in *Chap. IV.* And the Instructions and Example there laid down may serve here. We may only observe, that the Points punch'd on the Sector are here represented by Divisions longer than the rest.

A fourth Line, is a Line of 48 Divisions, number'd as the last was, 6, 12, 18, 24, 30, 36, 42, 48, and mark'd FPC.

Its Use is like that of 32 on the Sector, mark'd also FPC, to divide the Plane of a Column into its 24 Flutes, and 24 Fillets.

Let the Example be the same with that in *Chap. III.* *Fig. 2.* where *abp* represents one Quarter of the Plane of a Column, and *b* its Front; and suppose *ap* its Semidiameter to be two Inches; draw out the Siding Plates till the Distance between 32 and 32 be equal to two Inches the Semidiameter. At this 32d Division the Line is drawn longer than the smaller Divisions,

Divisions, for the more ready finding it. Then take the Distance

between 3 and 3, and lay it from *b* to *c*;
 between 5 and 5, and lay it from *b* to *d*;
 between 11 and 11, and lay it from *b* to *e*;
 between 13 and 13, and lay it from *b* to *f*;
 between 19 and 19, and lay it from *b* to *g*;
 between 21 and 21, and lay it from *b* to *h*;
 between 27 and 27, and lay it from *b* to *i*;
 between 29 and 29, and lay it from *b* to *k*;
 between 35 and 35, and lay it from *b* to *l*;
 between 37 and 37, and lay it from *b* to *m*;
 between 43 and 43, and lay it from *b* to *n*;
 between 45 and 45, and lay it from *b* to *o*;

and you will have the Flutes and Fillets laid off at their proper Distances, and of their due Magnitudes.

And here we may note, as in the other Lines, that at these Numbers the Divisions are longer than the rest, for Distinction's Sake.

If the Plan of the Column is to be divided into Flutes, without Fillets, as in the Dorick Order: After the Plate is duly drawn out as above, lay the Distance between 4 and 4, from *b* to *r*, for half the middle Flute; and

between 12 and 12, from *b* to *t*;
 between 20 and 20, from *b* to *u*;
 between 28 and 28, from *b* to *w*;
 between 36 and 36, from *b* to *x*;
 between 44 and 44, from *b* to *y*.

So shall one Quarter of the Plan of the Column be fluted: And in like manner the other Quarters may be fluted also.

Lastly,

The Description of

Lastly, you may observe, that if any of the Inconveniences, mentioned in the Use of the Architectonick Sector, are found in the Use of these Sliding Plates, they may be remov'd by the Directions laid down for the Sector.

THE END OF THE FIRST PART

**History and Architect Painting done
by the AUTHOR.**

THE END OF THE SECOND PART

F I N I S.



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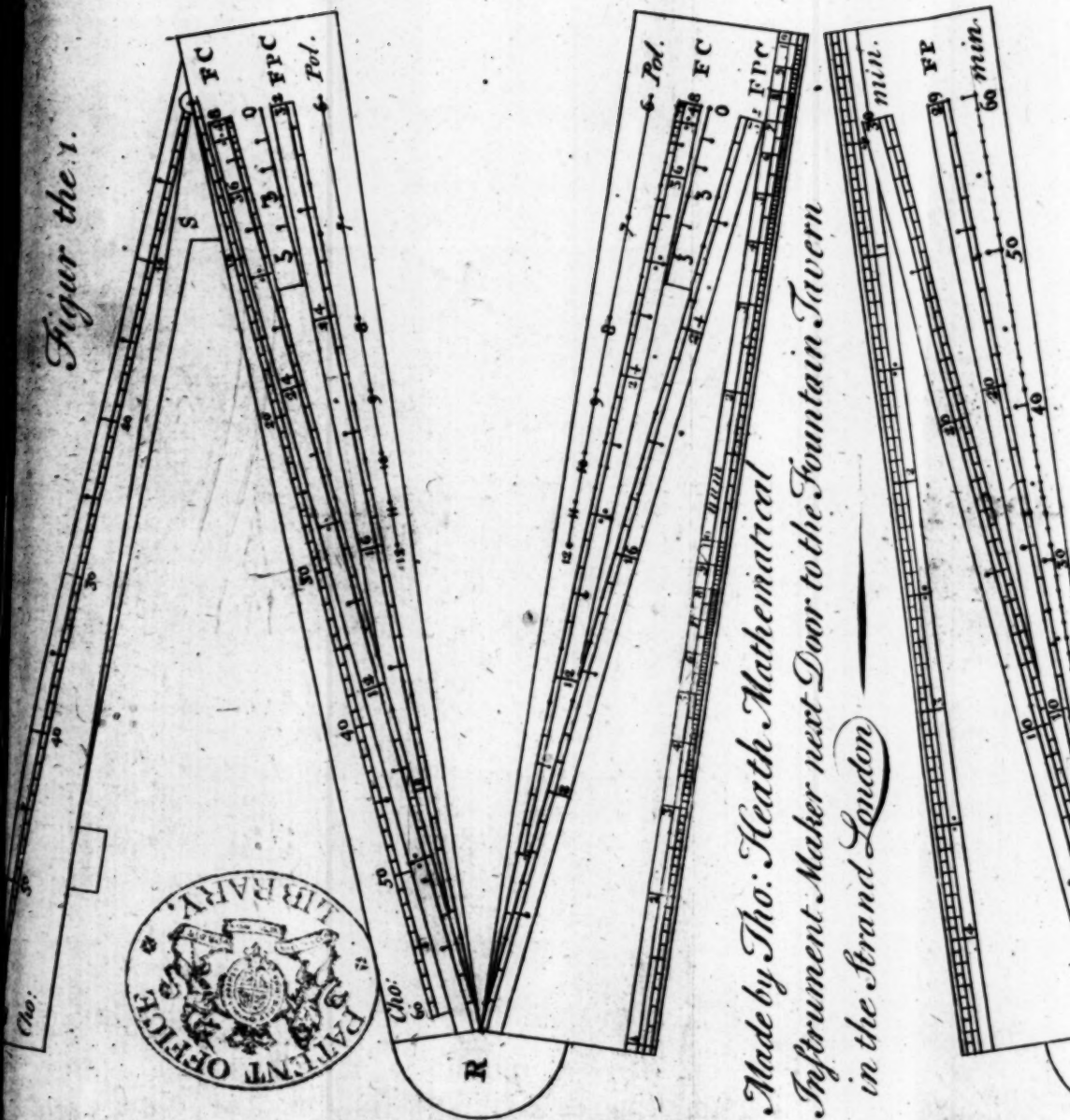
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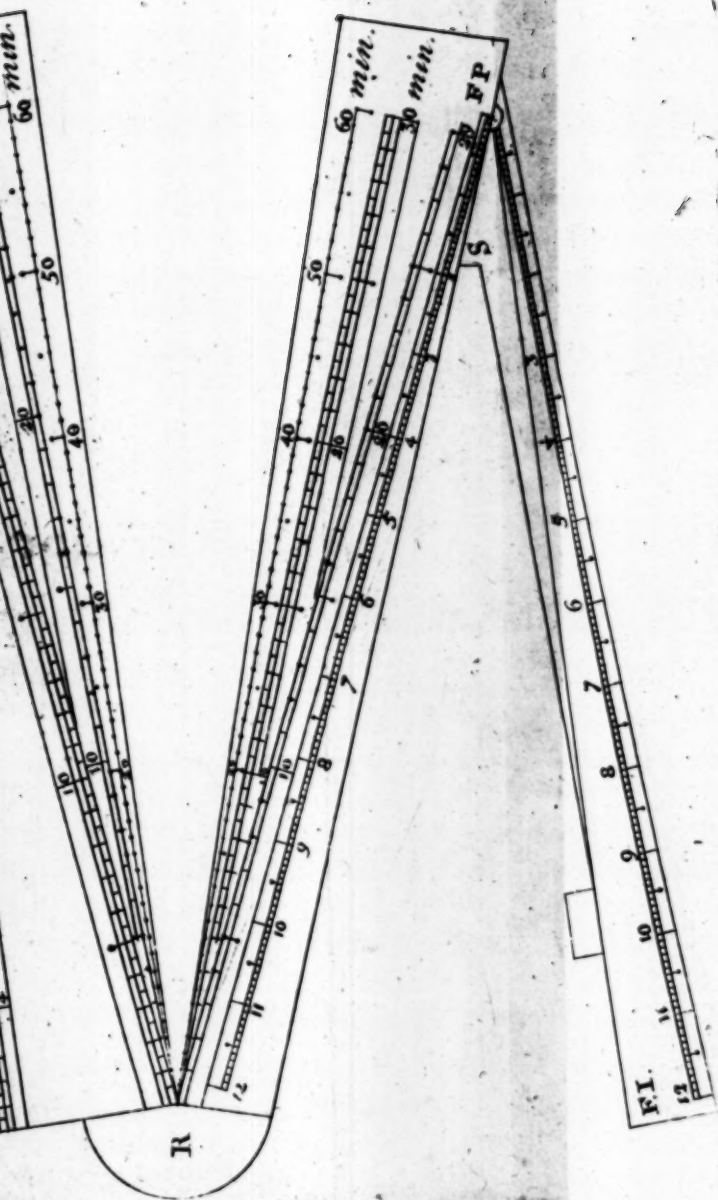
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Figur the 1.



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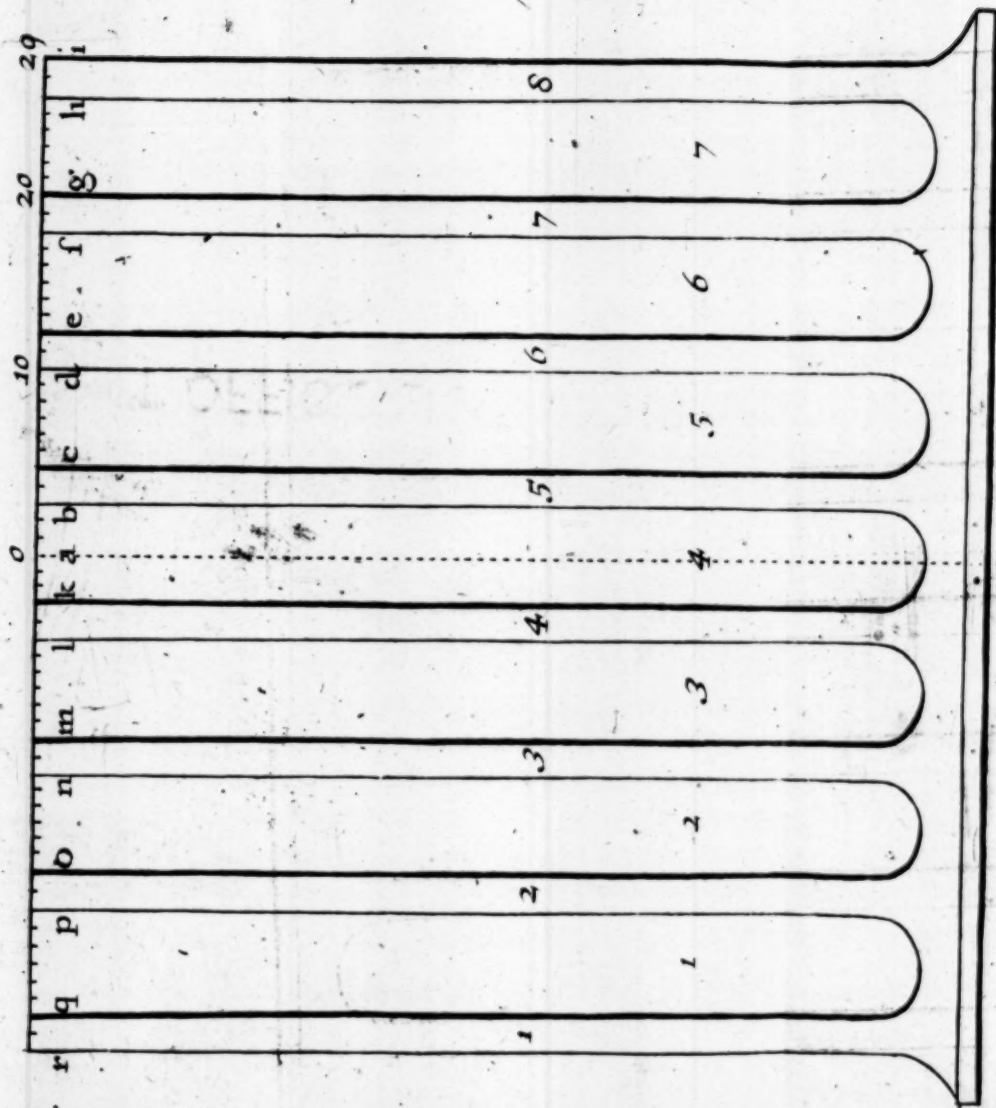


Fig. 2.



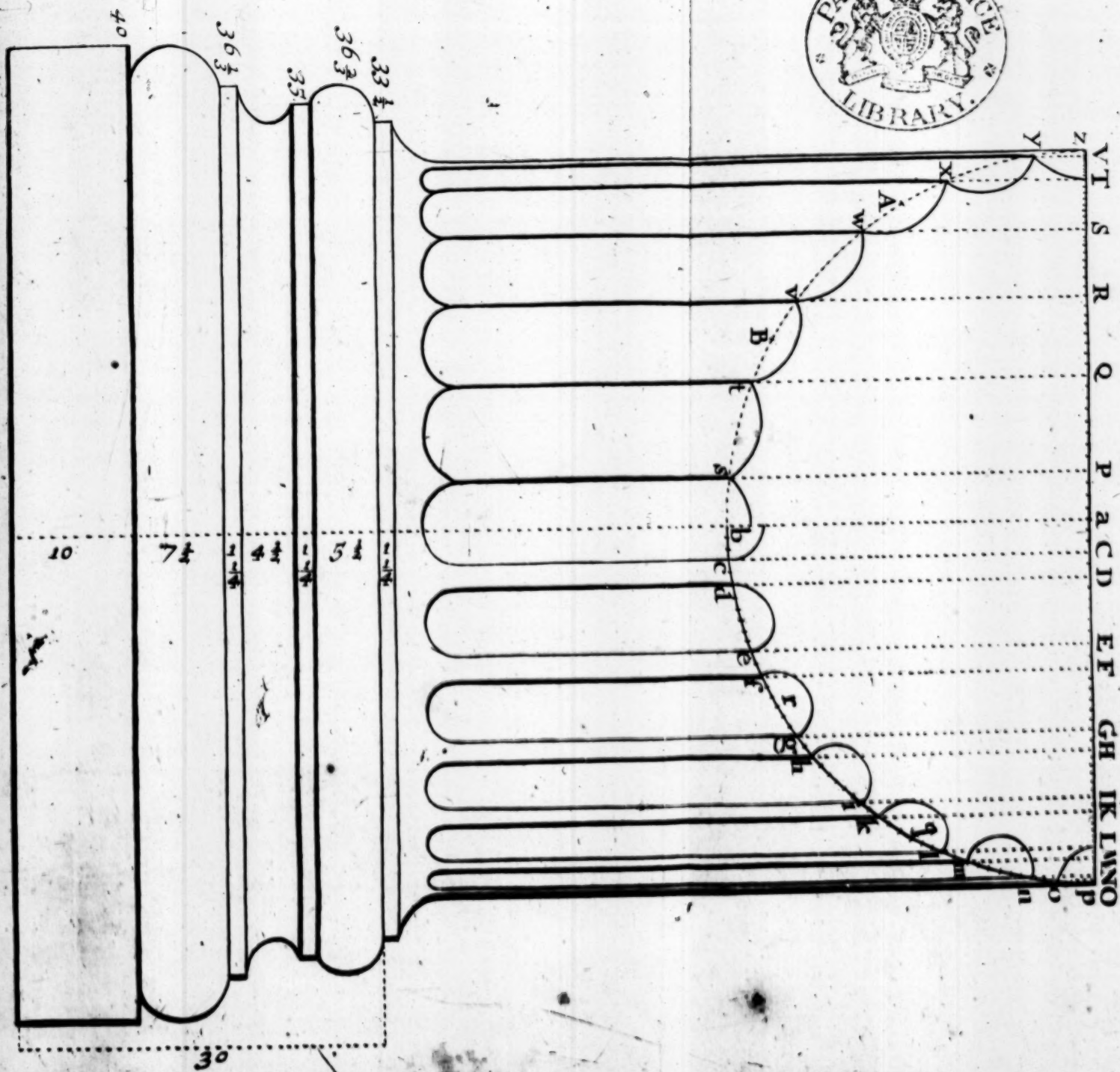


Fig. 3.

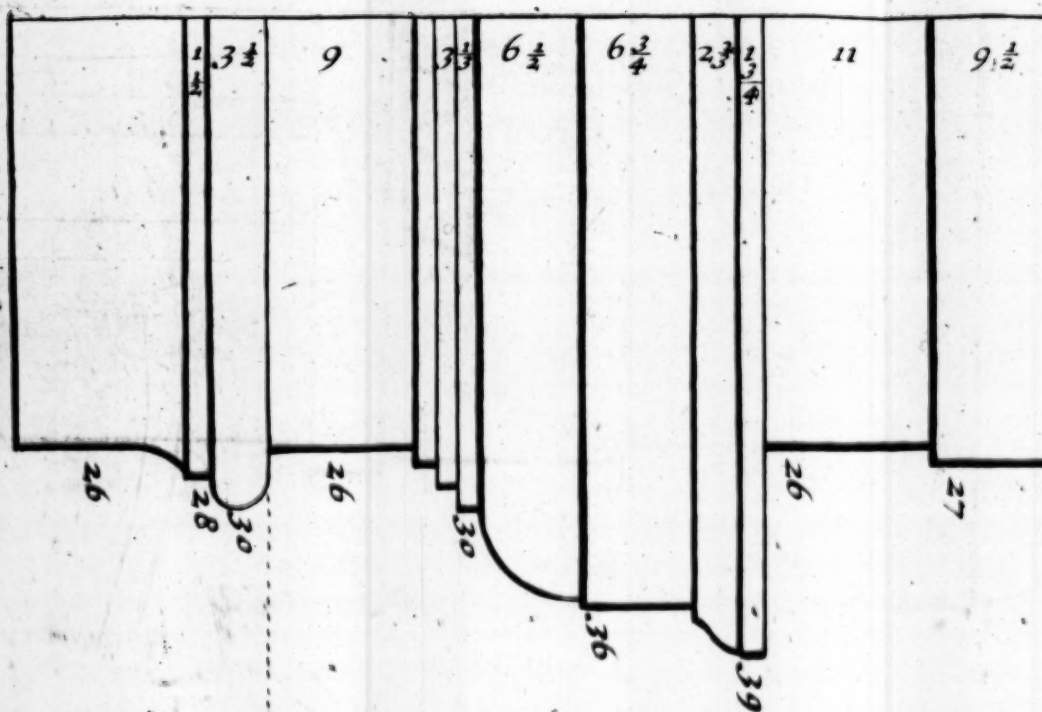


Fig. 4.

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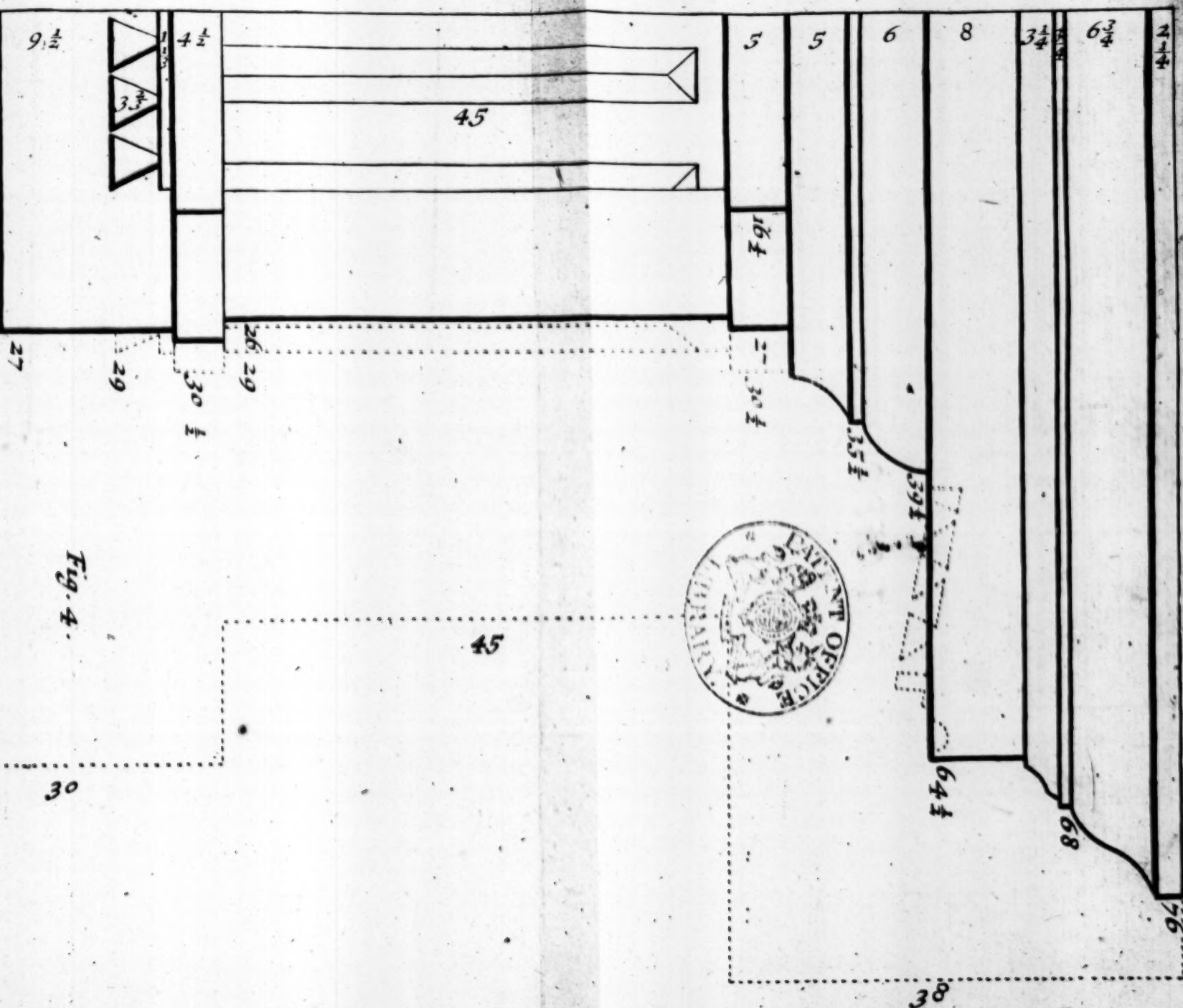
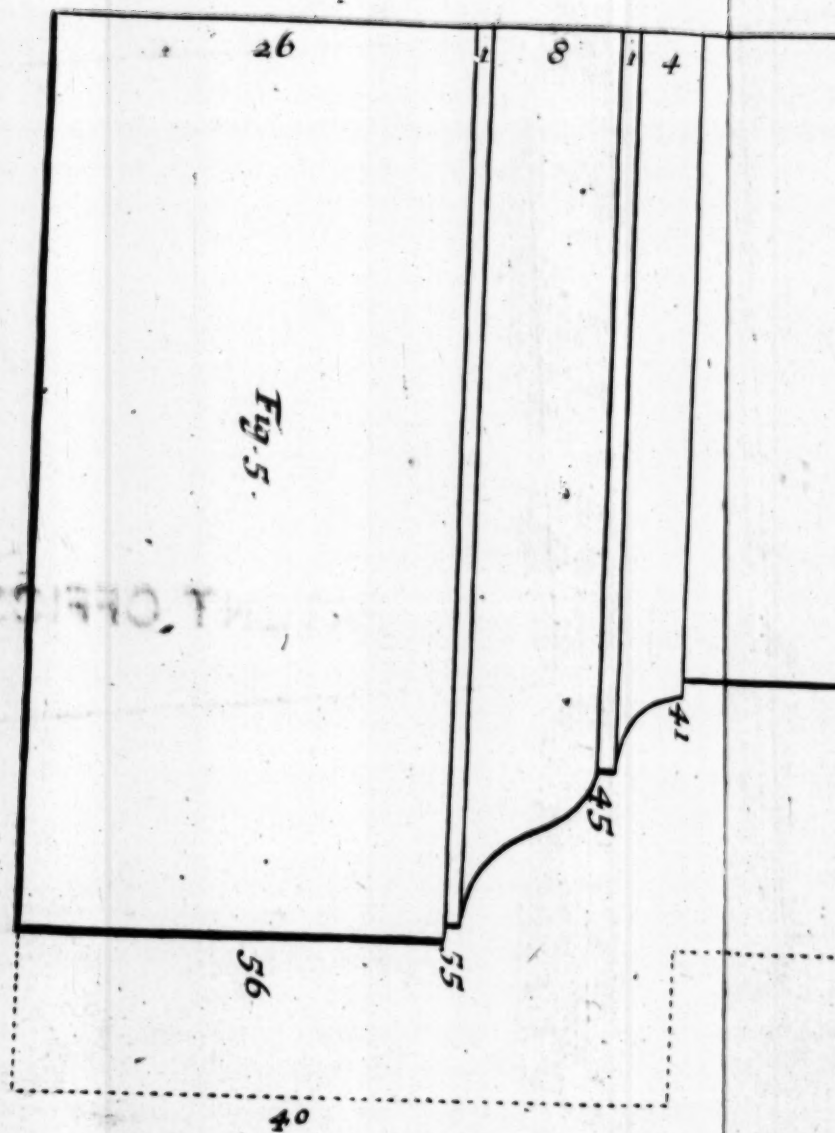


Fig. 4.





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